

REMARKS

This is in response to the Office Action dated August 10, 2007.

The claims have been amended to remove “entirely” therefrom. Thus, it is believed that the Section 112 rejection on pages 2-3 of the Office Action has been addressed and overcome.

Rejections based on Mashino

Claim 1 stands rejected under Section 102(e) as being allegedly anticipated by Mashino. This Section 102(e) rejection is respectfully traversed.

Claim 1 requires “a field oxide film formed over a surface of the semiconductor substrate, the field oxide film having an aperture section; a pad electrode, having an aperture section formed therethrough, the pad electrode being formed over the field oxide film so as to overlap the field oxide film when perpendicularly viewing the semiconductor substrate; and a penetration electrode electrically connected to the pad electrode, the penetration electrode being provided so as to pass through each of (a) the aperture section of the field oxide film, (b) a hole formed in the semiconductor substrate, and (c) the aperture section of the pad electrode, the hole in the semiconductor substrate being formed within the aperture section of the field oxide film, when perpendicularly viewing the semiconductor substrate, so that an opening of the hole is smaller than the aperture section of the field oxide film.” For example, see the field oxide film 2 in Fig. 1 of the instant application.

The Office Action contends that passivation layer 204 in Fig. 10 of Mashino corresponds to the field oxide film of claim 1. However, comparing Fig. 10 of Mashino with Fig. 1 of the instant application, it can be seen that passivation layer 204 of Mashino is similar to insulating film 3 of the instant application – not field oxide film 2. Thus, Mashino fails to disclose or suggest the field oxide film required by claim 1. The contention that passivation layer 204 is a

field oxide film is incorrect, and one of ordinary skill in the art would not have considered passivation layer 204 to be a field oxide film. It is respectfully submitted that claim 1 defines over the cited art.

In a similar manner, Mashino fails to disclose or suggest the field oxide film called for in claims 18, 19 and 28, and the rejections of those claims are flawed in a similar manner.

Claim 28 - Hayakawa

Claim 28 requires “a penetration electrode electrically connected to the pad electrode, the *penetration electrode being provided so as to pass through each of the aperture section of the field oxide film, and a hole formed in the semiconductor substrate, and wherein the hole in the semiconductor substrate is formed within the aperture section of the field oxide film, when perpendicularly viewing the semiconductor substrate, so that an opening of the hole is smaller than the aperture section.*” Hayakawa fails to disclose or suggest these features of claim 28.

Claim 28 requires that the *penetration electrode passes through a hole formed in the semiconductor substrate.* The alleged penetration electrode 51 in Hayakawa does not “pass through” any hole in semiconductor substrate 1. Fig. 13B of Hayakawa makes clear that the alleged penetration electrode 51 in Hayakawa does not “pass through” any hole in any semiconductor substrate.

The Examiner’s argument on page 3 of the Advisory Action dated January 24, 2007 that “the broad recitation of the claim does not require element 51 to pass through the entire thickness of the semiconductor substrate” is unreasonable and contrary to the well-established meaning of “through.” The Examiner’s alleged interpretation of “through” is directly contrary to the definition provided by *The American Heritage Dictionary*, cited below. For example, the phrase “a train passed through a tunnel” would never be interpreted as including the case where a train

entered a tunnel and stopped half-way through the tunnel. Moreover, Fig. 13B of Hayakawa makes clear that the alleged penetration electrode 51 does not even extend into any portion of semiconductor substrate 1. Again, the cited reference is entirely unrelated to the claimed invention in this respect and cannot possibly anticipate the same.

The *American Heritage Dictionary*, Third Edition (1994), defines “through” as: “[i]n one side and out another side of.” Thus, it is clear that according to claim 28 the penetration electrode must pass in one side and out another side of the semiconductor substrate. Hayakawa fails to disclose or suggest this. The Examiner’s alleged interpretation of “through” is directly contrary to the definition provided by The *American Heritage Dictionary*.

Moreover, claim 28 requires that “the *hole in the semiconductor substrate is formed within the aperture section of the field oxide film, when perpendicularly viewing the semiconductor substrate, so that an opening of the hole is smaller than the aperture section.*”

The only hole in the semiconductor substrate 1 in Hayakawa appears to be the hole between openings 27 and 28 in Fig. 14. However, this hole in semiconductor substrate 1 of Hayakawa is not formed within an aperture section of the alleged field oxide film 15 as viewed perpendicularly (as viewed from above). The Examiner clarified in the Advisory Action dated January 24, 2007 that the alleged penetration electrode in Hayakawa is element 51 at the left side of Fig. 13B. In Fig. 13B of Hayakawa, the field oxide is not numbered but is located, *inter alia*, under elements 52 and 18. The alleged hole 27, 28 in the substrate 1 (see Fig. 14) is clearly much *larger* (not smaller as required by claim 28) than the hole in the field oxide shown in Fig. 13B through which element 51 extends. Moreover, there is no hole in the semiconductor substrate in Fig. 13B that is within any aperture of the field oxide film.

Furthermore, the hole 27, 28 in the substrate 1 shown in Fig. 14 of Hayakawa cannot be the claimed hole because there is no penetration electrode passing therethrough as required by claim 28.

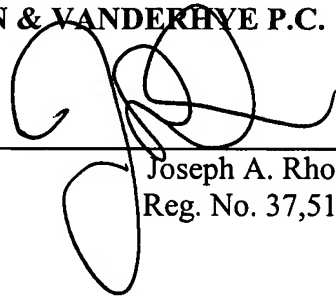
Conclusion

It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

NIXON & VANDERHIVE P.C.

By: _____

A handwritten signature in black ink, appearing to read 'Joseph A. Rhoa', is written over a horizontal line. The signature is stylized with large loops and a long horizontal stroke.

Joseph A. Rhoa
Reg. No. 37,515

JAR:caj
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100